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CORRESPONDENCE

An infant boy with widespread ecchymoses and severe eosinophilia

Dear Editor,

Bleeding with abnormal blood cell counts in children usually raises the concern of leukemia. However, parasitism may also lead to acquired platelet dysfunction with eosinophilia (APDE), a benign syndrome that occasionally causes severe bleeding. Herein, we present the first case report of APDE in Taiwan.

A 15-month-old, previously healthy boy with multiple "bruises" for 3 days was admitted for evaluation. He had no history of febrile illnesses, allergy, travel, or maltreatment. Furthermore, there was no personal or family history of bleeding tendency. His physical examination result was normal except for multiple ecchymoses on the trunk and four extremities (Fig. 1A–C). There was no hepatosplenomegaly. A complete blood count revealed a white blood cell count of 28.0 $\times$ 10^9/L (segments 10.5%, lymphocytes 37.2%, monocytes 3.5%, eosinophils 48.5%, and basophils 0.3%), hemoglobin 11.4 g/L, hematocrit 34.2%, mean corpuscular volume 80.4 fL, and platelets 75 $\times$ 10^9/L. The prothrombin time, activated partial thromboplastin time, antinuclear antibody, as well as C3 and C4 tests were all normal, but his serum immunoglobulin E rose to 263 kU/L (normal range, $<$200 kU/L). As bleeding and severe eosinophilia (13.6 $\times$ 10^9/L) raised concerns of end organ damage[1] and acute myeloid leukemia, a bone marrow study was performed and showed normal trilineage hematopoiesis with increased eosinophilic series (Fig. 1D). Subsequently, stool examination with the merthiolate–iodine–formaldehyde method revealed hookworm ova (Fig. 1E), which led to the clinical diagnosis of APDE. An evaluation of platelet function was attempted but not accomplished owing to poor sample condition after transportation to a reference laboratory. The patient was treated with mebendazole 100 mg twice/day for 3 days. The eosinophilia completely resolved 7 days later, and his ecchymoses gradually subsided. However, a few new bruises reappeared on his trunk 2 weeks later, which were milder and resolved within 2 months.

In 1975, Mitrakul[2] reported "non-thrombocytopenic purpura with eosinophilia" in Thai children, which was coined APDE by Suvatte et al.[3] The syndrome most commonly occurred in children with a mean age of 5.8 years (range, 1.1–12.6 years; n = 230).[3,4] An abnormal platelet aggregation induced by collagen, epinephrine, or ADP indicates defects in the extension phase of thrombus formation, resembling hereditary storage pool disease.[4] Severe bleeding, large hematoma, or hemorrhagic shock were noted in 8% of patients in two large series.[3,4]

More than 50% of APDE is associated with documented parasitic infections, including hookworms, *Ascaris*, *Enterobius*, *Trichuris*, and *Giardia lamblia*.[3,4] As the patient lived next to a rice field where he usually played, he might have been infected through skin contact with soil contaminated by the third stage, filariform larvae of *Ancylostoma duodenale* or *Necator americanus*. Although these two most common species of hookworms could not be distinguished solely by the morphology of their ova, we chose not to perform a colonoscopy to look for adult worms in this young child. Fortunately, the boy was cured by antihelminthic therapy alone.

As parasitic infections still occasionally occur in Taiwan,[5] awareness of the APDE syndrome among physicians will be helpful to treat the underlying infection promptly and to minimize the risk of life-threatening bleeding.

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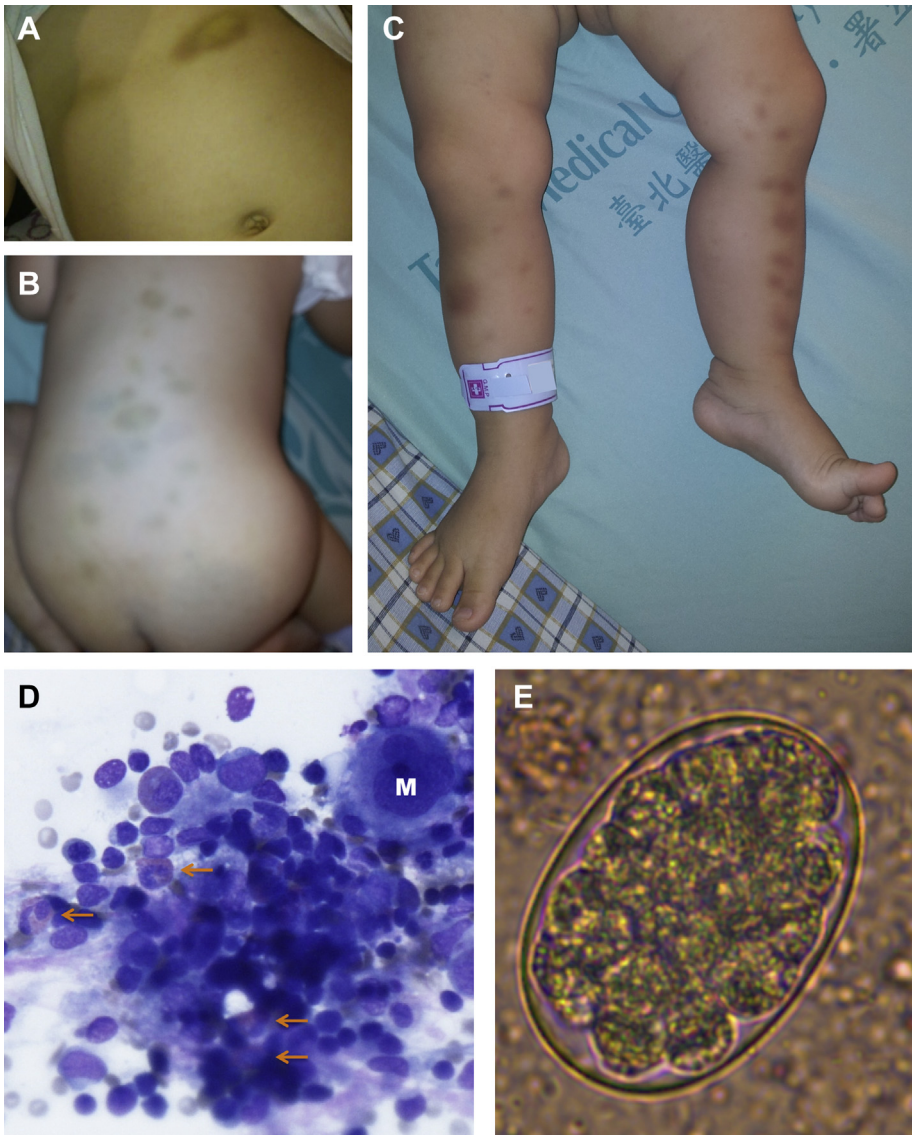

Figure 1. Clinical presentation and laboratory findings. (A—C) Ecchymoses were found on the chest, back, and lower limbs. (D) Bone marrow smear [100×, Liu's (Riu's) stain] shows trilineage hematopoiesis with the presence of megakaryocytes (M) and abundance of maturing eosinophilic myeloid cells (arrows). (E) Stool examination (400×, merthiolate—iodine—formaldehyde method) reveals ova of the hookworm.

Conflicts of interest

The authors declare that they have no conflicts of interest related to the content in this letter.

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Shu-Huey Chen
Department of Pediatrics, Taipei Medical University—Shuang Ho Hospital, Ministry of Health and Welfare, New Taipei, Taiwan

Chia-Kwung Fan
Department of Parasitology, College of Medicine, Taipei Medical University, Taipei, Taiwan

Center for International Tropical Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan

Master Program in Global Health and Development, College of Public Health and Nutrition, Taipei Medical University, Taipei, Taiwan

James S. Miser
College of Medical Science and Technology, Taipei Medical University, Taipei, Taiwan

Yen-Lin Liu
Department of Pediatrics, Taipei Medical University Hospital, Taipei, Taiwan

Degree Program of Translational Medicine, Academia Sinica—National Taiwan University, Taipei, Taiwan

Yu-Jyuan Huang
[h]*Department of Nursing, Taipei Medical University—Shuang Ho Hospital, Ministry of Health and Welfare, New Taipei, Taiwan*

Chuan-Yu Wang*
Department of Pediatrics, Taipei Medical University—Shuang Ho Hospital, Ministry of Health and Welfare, New Taipei, Taiwan

*Corresponding author. Department of Pediatrics, Taipei Medical University—Shuang Ho Hospital, Ministry of Health and Welfare, 291 Zhongzheng Road, Zhonghe, New Taipei 23561, Taiwan.
E-mail address: 10348@s.tmu.edu.tw (C.-Y. Wang)

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